

NEW LOCALITIES FOR THE WESTERN PYGMY POSSUM, *CERCARTETUS CONCINNUS*, IN THE GREAT VICTORIA DESERT

By D.J. PEARSON

Department of Conservation and Land Management, PO Box 51
Wanneroo WA 6065

D. R. KING

Western Australian Museum, Francis St., Perth, WA 6000

E. R. PIANKA

Department of Zoology, University of Texas, Austin, Texas 78712-1064 USA

Pygmy possums are small marsupials which eat insects and nectar (Wakefield 1963, Smith 1983). Known localities of Western Pygmy Possums, *Cercartetus concinnus*, in Western Australia are restricted to the southwest, extending inland to the Kalgoorlie region (Figure 1). Wakefield (1963) rejected Glauert's (1933) Sandstone locality (29°59'S, 119°18'E) which is well east of recorded inland localities because no specimens were available. During long-term pitfall trapping programs at Queen Victoria Springs (30°14'S, 123°41'E) and Yamarna Station (28°14'S, 123°36'E), we captured a number of Western Pygmy Possums. These sites lay well east and north-east of the previous known distribution of the species.

At the Queen Victoria Spring site, *C. concinnus* were captured over a period of four years between 1987-1991. The site was trapped for five days each year in autumn (March or April), spring (September or October) and summer (December). Additional trapping occurred in June 1987 and January 1989. Three types of pitfalls were used; 160 mm diameter PVC pipe (March 1987 to September 1988) and 250 mm

PVC tubes and plastic buckets. Total trapnights for this four year period was 13006. Some of the trapping site was burnt with experimental fires in September 1988, January 1989 and October 1990 to examine the responses of small mammals and reptiles to fires.

Of the ten individuals captured; one was caught in September 1987 (lodged at the Western Australian Museum, registration number M 44158), one in March 1988, three in September 1988, one in September 1989, one in October 1990 and three in September 1991. This trapping result indicates a strong trend for *C. concinnus* to be caught in spring months when there were abundant flowering shrubs (particularly *Hakea francisiana* and *Grevillea juncifolia*) and abundant insect life. The sex ratio of captures was not significantly different from parity (six females and four males) and all individuals captured were adults, ranging in weight from 9.0 to 16.8 g (mean 13.3 g). One female captured on 18 September, 1989 was carrying four pouch young. All possums were marked with ear tags and released; two recaptures occurred the night after their initial capture, but there were no

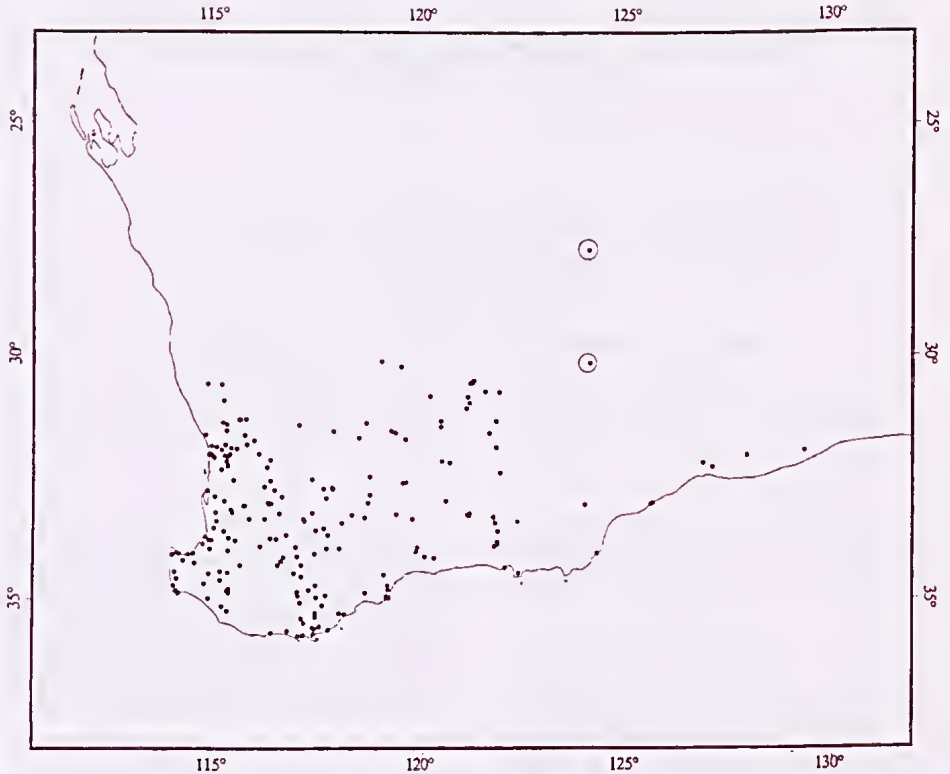


Figure 1. Museum locality records of the Western Pygmy Possum, *Cercartetus concinnus*, in Western Australia

recaptures between trapping periods. This, and the fact that most captures occurred during September and October, suggests that *C. concinnus* is a transient in this habitat, either dispersing through it in search of preferred habitat or visiting the area on a nomadic basis in search of food resources or perhaps mates.

A female *C. concinnus* was captured at Yamarna on 13 October 1998. This specimen was collected on a spinifex plain with only a few small scattered shrubs, none of which could have produced a substantial supply of nectar. Many *Grevillea* and *Hakea* plants were flowering profusely approximately 500 m from the pitfall line. Pit traps at this

site were 20 litre buckets (5,850 trap nights). This specimen weighed 13.0 g and may have been dispersing to a more suitable habitat, or may have been a permanent resident there. It was lodged in the mammal collection of the Western Australian Museum (registration number M 44119). Three years earlier, a few other *C. concinnus* were captured but released on Yamarna at a separate but similar pitfall line (20 litre buckets, 6,852 trap nights) 4 km northeast of this location (28°12', 123°35').

The fact that several Western Pygmy Possums were captured both at QVS and at Yamarna (over 3 years and at sites 4 km apart) suggests that viable

populations must exist around both of these areas. Grant and Temple-Smith (1987) stated that this species can go into torpor for periods of up to 11 days. Supplies of nectar and pollen at QVS and Yamarna would seem to be lacking for periods longer than this, indicating that *Cercartetus concinnus* must rely on insects as their main food during such periods. They probably also employ short-term torpor to deal with unfavourable weather conditions as individuals removed from traps after cool nights were typically tightly coiled into a ball and took a minute or so to rouse from this "torpid" state.

These two new locations are east (200 km) and northeast (about 350 km) of the closest previously known records in WA. Yamarna is well into the Great Victoria Desert, while Queen Victoria Spring lies on its south-western edge. Populations of Western Pygmy Possums may occur in other areas of the Great Victoria Desert but as little other intensive trapping has been done there, evidence of their occurrence or absence in other areas is not available. Further study is needed, but is likely to be difficult given the trapping effort required. At both sites while large numbers of some species of mammals were captured we also recorded only very few Mulgara, *Dasyercus cristicauda*, which are also apparently at very low densities or difficult to capture. Very little data on faunal composition are available from much of central Australia and geographic distributions of many species are based on short-term or opportunistic trapping which often fails to detect species at low densities or with

strong seasonal activity patterns. Survey work to document terrestrial vertebrate assemblages in central Australia should aim to sample both seasonal and between year variations.

ACKNOWLEDGEMENTS

We are grateful to Norah Cooper for confirming the identity of specimens and preparing Figure 1 and to many volunteers and CALM staff, particularly Janet Gardener and Dan Grace, for providing assistance in installing and checking pitfall traps. The comments of two anonymous reviewers improved the manuscript.

REFERENCES

- GLAUERT, L. 1933. The distribution of marsupials of Western Australia. *J. Roy. Soc. W. A.* 19: 17-32.
- GRANT, T. R. and TEMPLE-SMITH, P. D. 1987. Observations on torpor in the small marsupial *Dromociops australis* (Marsupialia: Microbiotheriidae) from southern Chile, pp. 257-271 in *Possums and Opossums: Studies on Evolution*. Vol 1. ed. by M. Archer. Surrey Beatty & Sons, Pty. Ltd., Chipping Norton, NSW.
- SMITH, M. J. 1983. Western Pigmy Possum, pp. 162-163 in *The Complete Book of Australian Mammals*, ed. by R. Strahan. Angus & Robertson, Sydney.
- WAKEFIELD, N. A. 1963. The Australian Pigmy Possum. *Victorian Naturalist* 80: 99-116.